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EXAMINER

KIM, PAUL

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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DETAILED ACTION

1. This Office action is responsive to the following communication: Amendment filed on 6 April 2009.
2. Claims 1-4, 6-7, 9-16, 18-20, 39-42, 44-45, 47-51, 53-54, and 56-58 are pending and present for examination.

Response to Amendment

3. No claims have been amended.
4. No claims have been cancelled.
5. No claims have been added.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
7. Applicant's Arguments are persuasive. Accordingly, the rejections under 35 U.S.C. 112 are withdrawn.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
9. **Claims 1-4, 7-11, 13, 16-17, 18-20, 39-42, 45-49, 51 and 54-58** are rejected under 35 U.S.C. 103(a) as being unpatentable over Idicula et al (U.S. Patent No. 6,950,822, hereinafter referred to as IDICULA), filed on 25 November 2002, and issued on 27 September

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2005, in view of Deinhart et al (U.S. Patent No. 5,911,143, hereinafter referred to as DEINHART), filed on 14 August 1995, and issued on 8 June 1999, and in further view of Jensenworth et al (U.S. Patent No. 6,279,111, hereinafter referred to as JENSENWORTH), filed on 12 June 1998, and issued on 21 August 2001.

10. **As per independent claims 1, 10, 18, 39, 48 and 56**, IDICULA, in combination with DEINHART and JENSENWORTH, discloses:

A computer-implemented method for controlling access to a resource of a plurality of resources, the method comprising the steps of:

creating and storing in a filesystem of an Operating System a plurality of files that each represents a different resource of the plurality of resources {See JENSENWORTH, C4:L42-50};

assigning an access value to a file attribute of a file that represents the resource, wherein the file attribute is used by the Operating System to manage file access, wherein the access value corresponds to a combination of a particular role and the resource {See JENSENWORTH, C5:L4-21, wherein this reads over "[t]he object 72 has a kernel level security descriptor 76 associated therewith, and the object manager 74 provides the security descriptor 76 and the token 60 to a security mechanism" and "[t]he contents of the security descriptor 76 are typically determined by the owner (e.g., creator) of the object, and generally comprise a (discretionary) access control list (ACL) 80 of access control entries, and for each entry, one or more access rights"};

receiving user-identifying information from a user requesting access to the resource, wherein the user-identifying information comprises a role associated with the user {See IDICULA, C5:L11-13, wherein this reads over "user information that indicates a user of the associated connection, the user's roles, and the user's privileges, among other information about the user"}, wherein the role is determined from a user identifier uniquely associated with the user and from a group identifier associated with a group that includes the user {See DEINHART, C1:L31-36, wherein this reads over "[i]n most of the installed computer systems access rights are granted or revoked explicitly for individual users or group of users on respective data or, more generally, on respective objects by a system administrator"};

receiving a resource identifier associated with the resource {See IDICULA, C7:L19-35, wherein this reads over "[i]f a session is already created for this client, a session object 122 associated with the client is indicated in the process state object 130"};

creating an access identifier based on the user-identifying information and the resource identifier, wherein the access identifier is formatted as a file attribute that is used by the Operating System to manage file access {See IDICULA, C4:L42-56, wherein this reads over "session objects 122, one or more process state objects 130a, 130b, collectively referenced hereinafter as process state objects 130, and a session pool object 140. In object-oriented technologies, an object is a data structure that stores data that indicates one or more attributes or methods or both"};

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calling the Operating System to perform a file operation on the file, wherein calling the Operating System includes providing the access identifier to the Operation System {See IDICULA, C1:L52-62, wherein this reads over "[a] session is a related series of one or more requests for services made over a communication channel. The channel is typically established by the operating system of the host for the database server"; and C7:L19-30, wherein this reads over "[i]f a session is already created for this client, a session object 122 associate with the client is indicated in the process state object 130; and that session object 122 is used"}; and

granting the user access to the resource when the Operating System call successfully performs the file operation {See IDICULA, C7:L20-21, wherein this reads over "a request is received from database client 102a for database services"}, wherein the Operating System call successfully performs the file operation if the access identifier matches the access value {See JENSENWORTH, C5:L15-21, wherein this reads over "[t]he security mechanism 78 compares the security IDs in the token 60 along with the type of action or actions requested by the process 70 against the entries in the ACL 80. If a match is found with an allowed user or group, and the type of access desired is allowable for the user or group, a handle to the object 72 is returned to the process 70"};

wherein the file operation on the file representing the resource is selected from a group consisting of opening the file, closing the file, deleting the file, reading from the file, writing to the file, executing the file, appending to the file, reading a file attribute, and writing a file attribute {See IDICULA, C7:L19-30, wherein this reads over "[i]f a session is already created for this client, a session object 122 associate with the client is indicated in the process state object 130; and that session object 122 is used"}.

While IDICULA fails to expressly disclose the determination of a role "from a user identifier uniquely associated with the user and from a group identifier associated with a group that includes the user," DEINHART discloses the grant or revocation of access rights for "individual users or group of users . . . on respective objects." Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above invention suggested by IDICULA by combining it with the invention disclosed by DEINHART.

Additionally, while IDICULA and DEINHART may fail to expressly disclose the method steps of assigning an access value to a fire attribute of a file and the Operating System call successfully performs the file operation if the access identifier matches the access value, JENSENWORTH discloses a security model using restricted tokens for file and resource access. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above invention suggested by IDICULA and DEINHART by combining it with the invention disclosed by JENSENWORTH.

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One of ordinary skill in the art would have been motivated to do this modification so that where a user falls within a classified group of users (e.g. System Administrator or Guest), a user identifier may be associated with the user accordingly.

11. **As per dependent claims 2, 11, 19, 40, 49 and 57**, it would be inherent for the role identifier and resource identifier to be stored in a first and second set of bits, respectively, since files are comprised of a sequence of bits.

12. **As per dependent claims 3, 20, 41 and 58**, IDICULA, in combination with DEINHART and JENSENWORTH, discloses:

A method as recited in Claim 1, wherein:

the step of creating an access identifier based on the user-identifying information and the resource identifier comprises formatting the access identifier as a group identifier file attribute {See DEINHART, C1:L31-36, wherein this reads over "[i]n most of the installed computer systems access rights are granted or revoked explicitly for individual users or group of users on respective data or, more generally, on respective objects by a system administrator"}; and

the step of calling the Operating System to perform an operation on the file representing the resource comprises:

assigning the access identifier to a group identifier attribute of an Operating System process {See IDICULA, C4:L42-56, wherein this reads over "session objects 122, one or more process state objects 130a, 130b, collectively referenced hereinafter as process state objects 130, and a session pool object 140. In object-oriented technologies, an object is a data structure that stores data that indicates one or more attributes or methods or both"}; and

calling an Operating System routine from the Operating System process to perform the operation on the file representing the resource {See IDICULA, C1:L52-62, wherein this reads over "[a] session is a related series of one or more requests for services made over a communication channel. The channel is typically established by the operating system of the host for the database server"; and C7:L19-30, wherein this reads over "[i]f a session is already created for this client, a session object 122 associate with the client is indicated in the process state object 130; and that session object 122 is used"}.

13. **As per dependent claims 4, 13, 42 and 51**, IDICULA, in combination with DEINHART and JENSENWORTH, discloses:

A method as recited in Claim 1,

wherein the step of calling the Operating System to perform an operation on the file representing the resource comprises comparing the access identifier to an identifier included in an Access Control List file attribute associated with the file representing the resource {See DEINHART, C1:L31-41,

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wherein this reads over "[w]hen an access request occurs during operation time of the computer system from a user or, more generally, from a subject to the object, then the security system looks at the access control list of the respective object and decides whether the subject may access the object in the request manner"},

wherein the Access Control List file attribute includes the identifiers of all users and all groups of users allowed to access the file representing the resource {See DEINHART, C1:L31-36, wherein this reads over "[i]n most of the installed computer systems access rights are granted or revoked explicitly for individual users or group of users on respective data or, more generally, on respective objects by a system administrator"}.

14. **As per dependent claims 7, 16, 45 and 54**, the claim does not carry patentable weight since the claim recites the file operation of "opening the file representing the resource," which was optionally recited in claims 1, 10, 18, 22, 31, 39, 48 and 56 (i.e. "wherein the file operation on the file representing the resource is selected from a group consisting of opening the file, closing the file, deleting the file, reading from the file, writing to the file, executing the file, appending to the file, reading a file attribute, and writing a file attribute"), upon which the said respective claims depend. Therefore, since the opening of the file is optional and not necessary to the claimed invention, the claim is rejected.

15. **As per dependent claims 8, 17, 46 and 55**, IDICULA, in combination with DEINHART and JENSENWORTH, discloses:

A method as recited in Claim 1, wherein the step of representing the resource by a file stored in the Operating System filesystem comprises:

creating the file representing the resource in the Operating System filesystem {See IDICULA, C4:L42-56, wherein this reads over "session objects 122, one or more process state objects 130a, 130b, collectively referenced hereinafter as process state objects 130, and a session pool object 140. In object-oriented technologies, an object is a data structure that stores data that indicates one or more attributes or methods or both"}; and

assigning an access value to a file attribute of the file representing the resource, the file attribute being used by the Operating System to manage file access {See IDICULA, C4:L42-56, wherein this reads over "session objects 122, one or more process state objects 130a, 130b, collectively referenced hereinafter as process state objects 130, and a session pool object 140. In object-oriented technologies, an object is a data structure that stores data that indicates one or more attributes or methods or both"}, wherein the access value corresponds to a combination of a role {See IDICULA, C5:L11-13, wherein this reads over "user information that indicates a user of the associated connection, the user's roles, and the user's privileges, among other information about the user"} and a resource {See IDICULA, C7:L19-35, wherein this reads over "[i]f a session is already created for this client, a session object 122 associated with the client is indicated in the process state object 130"}.

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16. **As per dependent claims 9 and 47**, IDICULA, in combination with DEINHART and JENSENWORTH, discloses:

A method as recited in Claim 8, wherein the file attribute used by the Operating System to manage file access is a group identifier file attribute {See DEINHART, C1:L31-36, wherein this reads over "[i]n most of the installed computer systems access rights are granted or revoked explicitly for individual users or group of users on respective data or, more generally, on respective objects by a system administrator"}.

17. **Claims 6, 12, 15, 44, 50 and 53** are rejected under 35 U.S.C. 103(a) as being unpatentable over Idicula et al, in view of Deinhart et al and Jensenworth et al, and in further view of Lewis (U.S. Patent No. 6,233,576, hereinafter referred to as LEWIS), filed on 25 September 1995, and issued on 15 May 2001.

18. **As per dependent claims 6, 15, 44 and 53**, IDICULA, in combination with DEINHART, JENSENWORTH, and LEWIS, discloses:

A method as recited in Claim 1, the method further comprising the steps of:

reading a permission bit associated with the file representing the resource, wherein the permission bit corresponds to the operation performable on the file representing the resource {See LEWIS, C14:L6-12, wherein this reads over "derive the authorization file names and the permission bits (from the resource class and name), and to apply the appropriate permissions"};

based on the operation on the file indicated by the permission bit, determining a resource operation that is performable on the resource {See LEWIS, C16:L64-C17:L4, wherein this reads over "[t]he resulting access rights consist of a three bit filed with the following meanings . . ."}; and

granting the user the privilege of performing the resource operation on the resource {See DEINHART, C1:L31-41, wherein this reads over "[w]hen an access request occurs during operation time of the computer system from a user or, more generally, from a subject to the object, then the security system looks at the access control list of the respective object and decides whether the subject may access the object in the request manner"} only if the permission bit allows the operation to be performed on the file representing the resource {See LEWIS, C17:L5-9}.

While IDICULA and DEINHART fail to expressly disclose the use of permission bits in determining user privileges, LEWIS discloses the use of permission bits which signify Read, Write, or Execute authority. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above invention suggested by IDICULA and DEINHART by combining it with the invention disclosed by LEWIS.

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One of ordinary skill in the art would have been motivated to do this modification so that files may contain permission bits which allow users the permission to certain operations on the file.

19. **Claims 6, 12, 15, 44, 50 and 53** are rejected under 35 U.S.C. 103(a) as being unpatentable over Idicula et al, in view of Deinhart et al and Jensenworth et al, and in further view of Official Notice.

20. **As per dependent claims 12 and 50**, IDICULA, in combination with DEINHART, JENSENWORTH, and Official Notice, discloses:

A method as recited in Claim 10, wherein the step of making an Operating System call to perform an operation on the file representing the resource comprises:

storing the group identifier value of a group identifier attribute of an Operating System process {See DEINHART, C1:L31-36, wherein this reads over "[i]n most of the installed computer systems access rights are granted or revoked explicitly for individual users or group of users on respective data or, more generally, on respective objects by a system administrator"};

assigning the access identifier to the group identifier attribute of the Operating System process {See IDICULA, C4:L42-56, wherein this reads over "session objects 122, one or more process state objects 130a, 130b, collectively referenced hereinafter as process state objects 130, and a session pool object 140. In object-oriented technologies, an object is a data structure that stores data that indicates one or more attributes or methods or both"};

calling an Operating System routine from the Operating System process to perform the operation on the file representing the resource {See IDICULA, C1:L52-62, wherein this reads over "[a] session is a related series of one or more requests for services made over a communication channel. The channel is typically established by the operating system of the host for the database server"; and C7:L19-30, wherein this reads over "[i]f a session is already created for this client, a session object 122 associate with the client is indicated in the process state object 130; and that session object 122 is used"}, wherein the operation on the file representing the resource is performed only if the value of the group identifier attribute of the Operating System process matches the value of the group identifier file attribute of the file representing the resource {See IDICULA, C7:L20-21, wherein this reads over "a request is received from database client 102a for database services"}; and

resetting the group identifier attribute of the Operating System process to the stored group identifier value {See Official Notice}.

The Examiner takes Official Notice that it would have been obvious to one of ordinary skill in the art at the time the invention was made to reset the group identifier attribute of the Operating System process to the stored group identifier value. That is, where a group identifier

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is set, it would have been obvious to one of ordinary skill in the art to have the capability to reset said group identifier attribute accordingly.

Response to Arguments

21. Applicant's arguments filed 27 October 2008 have been fully considered but they are not persuasive.

a. Rejections under 35 U.S.C. 103

i. Firstly, Applicant asserts the argument that Jensenworth fails to teach or suggest that the recited access value corresponds to a particular role and a resource. See Amendment, page 24. The Examiner respectfully disagrees. It is noted that Jensenworth discloses that the contents of the security descriptor comprise a discretionary access control list (ACL) for each entry and one or more access rights. See Jensenworth, col. 5, lines 4-21. Accordingly, wherein an access control list is a list of permissions attached to an object which specifies who or what is allowed to access the object, it would have been obvious to one of ordinary skill in the art that said access control list would read upon the limitation of an "access value [which] corresponds to a combination of a particular role and the resource."

Additionally, Applicant asserts the argument that Jensenworth "lack[s] of any reference to roles." See Amendment, page 24. The Examiner respectfully disagrees in that Jensenworth is directed to a security access system wherein tokens identifying a user are used to grant or limit access privileges. Specifically, Jensenworth discloses a method of identifying a member as part of a certain group (e.g. an "Accounting" group) such that the user, as part of said group, is granted read and write access rights according to those afforded said group. Accordingly, it would have been obvious to one of ordinary skill in the art that a

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user's membership within a group may indeed read upon the claimed feature of an access value (i.e. read and write access) which corresponds to a particular role (i.e. membership within a certain group) and a resource (i.e. the data source).

ii. Secondly, Applicant asserts the argument that Deinhart fails to teach or suggest the recited role. See Amendment, page 25. The Examiner respectfully disagrees. Specifically, Applicant asserts the argument that the cited portion of Deinhart "fails to teach or suggest that a role is determined from two specific identifiers: a user identifier and a group identifier." See Amendment, page 25. It is noted that Deinhart discloses an invention wherein access rights are granted or revoked explicitly for individual user or group of users. Furthermore, it is noted that Idicula discloses an invention wherein user information is used to indicate the user's roles and privileges. Accordingly, it would have been obvious to one of ordinary skill in the art that the combination of Idicula and Deinhart would disclose a method wherein a user would have access rights to an object based upon the individual user's privileges or the group's privileges to which the individual user belongs to. Therefore, the Examiner notes that Deinhart, in combination with Idicular would indeed disclose the recited claim limitation.

Additionally, Applicant is directed to Examiner's response with regards to Jensenworth provided in subparagraph (i) above.

iii. Thirdly, Applicant asserts the argument that Idicula fails to teach or suggest the recited resource identifier. See Amendment, page 25. The Examiner respectfully disagrees. It is noted that Idicula discloses the use of a session object (i.e. the resource identifier) wherein the object (i.e. the resource) being used for the session is identified. That is, wherein a client initiates a session with an object, a session object associated with said object is created.

Furthermore, for purposes of clarification, it is noted that the session object which is associated with accessing an object of the database.

Accordingly, the session object would indeed read upon the claim limitation of "receiving a resource identifier associated with the resource."

iv. Fourthly, Applicant asserts the argument that Idicula fails to teach or suggest the recited access identifier. See Amendment, page 26. The Examiner respectfully disagrees. It is noted that Idicula discloses a method step wherein the session object is associate with the client in the process state object. See Idicula, col. 7, lines 57-65. Furthermore, it is noted that during said method step, type I and type II information is generated to refresh and replace the information in the session object. Additionally, Idicula discloses that Type I information comprises of "user information that indicates a user of the associated connection, the user's roles, and the user's privileges." See Idicula, col. 5, lines 9-18.

Additionally, Applicant asserts the argument that Type I information would have to be "(1) created based on a session object, (2) formatted as a file attribute, and (3) used by the OS to manage file access." See Amendment, page 27. Accordingly, the Examiner note the following:

(1) Idicula discloses that "each session object 122 includes four types of information – types I, II, III, IV." See Idicula, C5:L9-10. It is further noted that "Type I information is user information that indicates a user of the associated connection, the user's roles, and the user's privileges, among other information about the user." See Idicula, C5:L11-13. Accordingly, it would have been obvious to one of ordinary skill in the art that the Type I information (i.e. access identifier) would be created based on the session object connection.

(2) Idicula discloses that each session object includes Type I and II information which is stored and updated, it would have been obvious to one of ordinary skill in the art that said information would constitute a file attribute.

(3) Idicula discloses that while Type I information includes user information and privileges and Type II information includes the current database command and a set of commands that constitute a database, both are used in establishing the session object when a client connects to the database server. Accordingly, it would have been obvious to one of ordinary skill in the art that when both the Type I and II information are used to establish a database connection, the aforementioned disclosure would indeed read upon the limitation of being "used by the Operating System to manage file access."

Accordingly, for the aforementioned reasons above, the Examiner notes that Idicula would indeed disclose the claim limitation of "creating an access identifier based on the user-identifying information and the resource identifier, wherein the access identifier is formatted as a file attribute that is used by the Operating System to manage file access."

v. Fifthly, Applicant asserts the argument that Idicula fails to teach or suggest calling an Operating System to perform a file operation on a file. See Amendment, page 27. The Examiner respectfully disagrees. It is noted that Idicula discloses the use of a session object in establishing a database connection. Accordingly, wherein session objects are used by the database server "to service requests for database services," it would have been obvious to one of ordinary skill in the art that a file operation would be performed on the file by the Operating System of the database server. See Idicula, col. 1, lines 52-

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62. Additionally, it is noted that Jensenworth discloses an invention wherein a Windows NT operating system is used to access files, shared memory and physical devices which are represented by objects. See Jensenworth, col. 4, lines 42-65. Accordingly, it would have been obvious to one of ordinary skill in the art that the combination of Idicula and Jensenworth would disclose the method step of calling an Operating System to perform a file operation on the file.

vi. Lastly, Applicant asserts the argument that "Idicula fails to teach or suggest granting a user access to the resource only when the Operating System call successfully performs a file operation." See Amendment, page 29. The Examiner respectfully disagrees. Wherein a client computer attempts to establish a connection with a database for database services, the database server creates and accesses the session object to determine whether a client user is to be granted access to the database. That is, wherein Type I information of the session object contains user's privileges and Type III information contains access control lists, it would have been obvious to one of ordinary skill in the art that accessing the session object would indeed be related to the granting of access to a resource.

Accordingly, for the aforementioned reasons above, the claim rejections under 35 U.S.C. 103 are maintained.

Conclusion

22. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the

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mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL KIM whose telephone number is (571)272-2737. The examiner can normally be reached on M-F, 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tony Mahmoudi can be reached on (571) 272-4078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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